Fire Suppression System, Building No. 1
Bradley Air National Guard Base,
East Granby, CT
Project # CEKT962043
Amendment 0004

SECTION 07810 - PLASTIC UNIT SKYLIGHTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes plastic unit skylights.

1.3 SUBMITTALS

A. General: Submit the following according to the Conditions of Contract and Division 1 Specification Sections.

B. Product data for each type of skylight specified, including details of construction relative to materials, dimensions of individual components, profiles, finishes, and glazing light transmission and thermal characteristics.

C. Shop drawings showing fabrication and installation of skylights, including plans, elevations, sections, details of components, and attachments to other units of Work.

D. Samples for verification purposes in full-size units or a representative section of each type of skylight indicated for each color, texture, shape, and sizes specified.

1.4 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: Provide plastic sheets identical to those tested for the following fire-test-response characteristics, per ASTM test method indicated below, by UL or other testing and inspecting agencies acceptable to authorities having jurisdiction. Identify plastic sheets with appropriate markings of applicable testing and inspecting organization.

1. Self-Ignition Temperature: 650 deg F (343 deg C) or greater when tested per ASTM D 1929 on plastic sheets in the thickness intended for use.
2. Smoke density of 75 or less when tested per ASTM D 2843 on plastic sheets in the thickness intended for use.
3. Relative-Burning Characteristics: As follows, when tested per ASTM D 635:

a. Acrylic: Burning rate of 2.5 inches (64 mm) per minute or less when tested on plastic glazing indicated below with a nominal thickness of 0.060 inch (1.5 mm) or the thickness intended for use.

1.5 WARRANTY

A. General: Warranties specified in this Section shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to and run concurrent with other warranties made by the Contractor under requirements of the Contract Documents.

B. Skylight Warranty: Provide written warranty signed by manufacturer, agreeing to repair or replace work that exhibits defects in materials or workmanship and guaranteeing weathertight and leak-free performance. "Defects" is defined as uncontrolled leakage of water and abnormal aging or deterioration.

1. Warranty Period: 5 years from date of Substantial Completion.

C. Plastic Warranty: Provide written warranty signed by manufacturer agreeing to repair or replace work that has or develops defects in the plastic. "Defects" is defined as abnormal aging or deterioration.

1. Warranty Period for Acrylic: 5 years from date of Substantial Completion against yellowing.

D. Finish Warranty: Provide written warranty signed by manufacturer agreeing to repair or replace work with finish defects. "Defects" is defined as peeling, chipping, chalking, fading, abnormal aging or deterioration, and failure to perform as required.
1. Warranty Period for Fluoropolymer Finish: 5 years from date of Substantial Completion for color and film integrity.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include, but are not limited to, the following:
1. American Skylights.
2. Bristolite Skylights.
3. Naturalite/EPI Skylight Systems.
4. Thermo-vue.
5. Plasticrafts, Inc.
6. Wasco Products, Inc.

2.2 MATERIALS

A. Aluminum Sheets: ASTM B 209 (ASTM B 209M) for Alclad alloy 3005-H25 or alloy and temper required to suit forming operations and finish requirements. Mill finish unless indicated otherwise.

B. Extruded Aluminum: ASTM B 221 (ASTM B 221M) alloy 6063-T52 or alloy and temper required to suit structural and finish requirements. Mill finish unless indicated otherwise.

C. Plastic Sheets: Monolithic, formable, transparent (colorless and tinted) or translucent (white) sheets with good weather and impact resistance.

1. Acrylic: ASTM D 4802, thermoformable, cast or continuous-cast acrylic (methacrylate), Category C-1 or C-2, Type UVA (formulated with ultraviolet absorber), with Finish 1 (smooth or polished), unless otherwise indicated.
2. Revise below if cellular plastic or other types desired.

D. Insulation: Manufacturer's standard rigid or semirigid glass-fiber board of thicknesses indicated.

E. Wood Curbs and Nailers: Softwood lumber, pressure-treated with waterborne preservatives for above-ground use, complying with AWPA C2; not less than 1-1/2 inch (38 mm) nominal thickness.

F. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.

1. Where removal of exterior exposed fasteners affords access to building, provide nonremovable fastener heads.

G. Bituminous Coating: SSPC-Paint 12, solvent-type, bituminous mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil (0.4 mm) dry film thickness per coating.

H. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

I. Elastomeric Sealant: Generic type recommended by unit manufacturer that is compatible with joint surfaces. ASTM C 920; Type S; Grade NS; Class 25; and Uses NT, G, A, and (as applicable to joint substrates indicated) O.

J. Roofing Cement: ASTM D 4586, nonasbestos-fibrated, asphalt cement designed for trowel application or other adhesive compatible with roofing system.

2.3 FINISHES

A. General: Comply with NAAMM "Metal Finishes Manual" recommendations for application and designations of finishes.

B. Finish designations prefixed by AA conform to the system for designating aluminum finishes established by the Aluminum Association.

C. Fluoropolymer, Two-Coat Coating System: Manufacturer's standard two-coat thermocured system, complying with AAMA 605.2, composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene resin by weight; complying with AAMA 605.2.
   1. Color and Gloss: As selected by Contracting Officer from manufacturer's standard choices for color and gloss.

2.4 PLASTIC SKYLIGHT UNITS

A. General: Factory-assembled unit consisting of plastic glazing, extruded aluminum glazing retainer, gasketing, inner frame that may be incorporated into the curb, and integral curb with self-contained roof flashing flanges.

B. Curb: Self-flashing, self-supporting double-wall, formed or extruded (or combination) aluminum curb, minimum 0.040-inch (1.0- mm) wall thickness, enclosing minimum 1-inch (25-mm) glass-fiber board (or equivalent) insulation and with minimum 3-inch (75-mm) roof flanges, with welded or sealed mechanical joints at corners.
   1. Height: Minimum 3 inches (75 mm) above roofing.

C. Condensation Control: Fabricate skylight units with integral internal gutters and nonclogging weeps to collect and dispose of condensation.

D. Thermal Break: Fabricate skylight units with thermal barrier separating interior metal framing from materials exposed to outside temperature.

E. Shape and Size: As indicated.

F. Glazing: Thermoformed acrylic.
   1. Sheet Thicknesses: Provide glazing plastic sheet thickness required for 40 lbf/sq. ft. (1.9 kPa) positive (external) loading and 20 lbf/sq. ft. (0.95 kPa) negative or uplift (internal) loading as recommended by the skylight manufacturer for unit size and shape.

   2. Profile: Double dome, 25 percent rise.
      a. Outer Glazing Color: Colorless, transparent acrylic, 92 percent visible light transmittance.
      b. Inner Glazing Color: White, No. 2067, translucent acrylic, 72 percent visible light transmittance.

3. Glazing Gaskets: Manufacturer's standard glazing system of EPDM or neoprene, closed-cell sponge neoprene, or EPDM, or of partially vulcanized butyl tape or liquid-applied elastomeric sealant.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's instructions and recommendations. Coordinate with installation of roof deck and other substrates to receive skylight units. Coordinate with installation of vapor barriers, roof insulation, roofing, and flashing as required to assure that each element of the work performs properly and that combined elements are waterproof and weathertight. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.

1. Except as otherwise indicated, install roof skylights according to construction details of "NRCA Roofing and Waterproofing Manual."

B. Isolation: Where metal surfaces of units are to be installed in contact with incompatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide another permanent separation.

C. Flange Seals: Except as otherwise indicated, set flanges of accessory units in a thick bed of roofing cement to form a seal.

D. Cap Flashing: Where cap flashing is required as component of the skylight, install to provide an adequate waterproof overlap with roofing or roof flashing (as counterflashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

E. Install skylight to resist snow shear on roof. Provide crickets or other snow diverter as required.

3.2 CLEANING AND PROTECTION

A. Clean exposed metal and plastic surfaces according to manufacturer's instructions. Touch up damaged metal coatings.

B. Clean and polish plastic skylight units, inside and out, not more than 5 days prior to date of substantial completion.

END OF SECTION 07810